

REMARKS

Status Summary

Claims 1-4, 6-15, 17-23, and 25-29 are pending in the present application. Claims 1, 12, and 22 have been amended. Therefore, upon entry of this Amendment, claims 1-4, 6-15, 17-23, and 25-29 will remain pending.

Claim Rejections Under 35 U.S.C. § 101

Claims 22, 23, and 25-29 stand rejected under 35 U.S.C. § 101. The Examiner contends that the claimed subject matter is directed to non-statutory subject matter because it does not recite a computer program product comprising computer executable instructions stored in a computer readable medium, “*when executed by a processor of a computer to perform the steps.*” (See page 2 of the Official Action. Emphasis in the original.)

Applicant has amended claim 22 as suggested by the Examiner. In particular, claim 22 has been amended to recite “computer-executable instructions, stored in a computer-readable medium, which when executed by a processor of a computer perform steps comprising” (emphasis added) rather than “computer-executable instructions stored in a computer-readable medium for performing the steps comprising”. Accordingly, applicant respectfully submits that the rejection of independent claim 22 and dependent claims 23 and 25-29 under 35 U.S.C. § 101 should be withdrawn.

Claim Rejections Under 35 U.S.C. § 102

Claims 1, 2, 4, 6-12, 14, 15, 17-23, and 25-29 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent Application Publication No. 2002/0118813 to Brehm et al. (hereinafter, "Brehm"). This rejection is respectfully traversed.

Independent claims 1, 12, and 22 respectively recite a method, a system, and a computer program product for automated analysis of signaling link utilization data. Each of these claims recites that a graph of signaling link occupancy per unit time is displayed to a user via a signaling link utilization screen. Each claim also recites that the graph includes a plurality of portions indicating signaling link occupancies at different times. Input is received from a user for selecting one of the portions. In response to the input, signaling message data corresponding to the selected portion is automatically extracted from a signaling message database. Each claim also recites that the signaling message data includes message types for signaling messages corresponding to the selected portion of the graph. Each claim has been amended to clarify that the selected signaling link data corresponds to signaling link utilization for one of the signaling links at a specific time period. Thus, each claim recites selecting link utilization data for a signaling link and displaying corresponding signaling message type data, which can be useful to diagnose anomalies in signaling link utilization.

An example of a graph that displays signaling link occupancy per unit time is illustrated in Figure 3. In Figure 3, the graph includes colored spikes that indicate link occupancies for different signaling links at different time periods. When a user selects one of the spikes, the signaling message data illustrated in Figure 4 is displayed. As illustrated in Figure 4, the signaling message data that is displayed includes the

signaling message type, which allows the user to understand the causes of events, such as abnormal signaling link utilization, indicated by the selected portion of the graph.

There is absolutely no disclosure, teaching, or suggestion in Brehm of displaying a graph of signaling occupancy per unit time to a user where the graph includes portions indicating signaling link occupancies at different times, receiving user input for selecting one of the portions, and displaying corresponding signaling message type data from a database. Brehm is directed to verifying usage and quality of interconnection services for a communication network. In particular, Brehm discloses capturing signaling data for various interconnecting carriers **502** by one or more monitors **310** (See Brehm, paragraph [0059]), which correlate the data related to a particular transaction or call into a single call detail record (CDR) or usage detail record (UDR) (Brehm, paragraph [0032]). The generated CDR/UDRs are sent to a server (Brehm, paragraph [0035]) and stored in a historical database **412** (Brehm, paragraph [0059]). Brehm also discloses storing in the database **412** statistical information extracted from the generated CDR/UDRs. (Brehm, paragraph [0051], and Table 5). Nowhere, however, does Brehm disclose, teach, or suggest storing the signaling messages including signaling message type information in a database.

Brehm also discloses that a workstation **318** may be used to request various reports of data stored in historical database **412**. (Brehm, paragraph [0060]). A workstation user may interactively request a particular report for one or more carriers (or trunk groups) over a particular period of time. (Brehm, paragraph [0060]). Further, Brehm discloses that a user may "drill down" into information provided in a report to

obtain greater information. (Brehm, paragraph [0060]). In one example provided by Brehm, an initial report shows the “incoming minutes of use” for carriers A, B, and C. (Brehm, paragraph [0060]). Additional detail about one of the carriers may be obtained by using a pointer device (e.g., a mouse) to click on a block of data associated with the carrier. (Brehm, paragraph [0060]). As a result, a second report may be generated and presented that shows more detailed information about minutes of use for the selected carrier. (See paragraph [0060], of Brehm). Brehm discloses that a user may “drill” further into the data provided in the second report. (Brehm, paragraph [0060]).

Although Brehm discloses “drilling down” into reports to obtain more detailed information, Brehm fails to teach or suggest displaying a graph of signaling link occupancy per unit time to a user and allowing the user to select signaling link utilization data for one of the signaling links for a time period as now claimed and view corresponding signaling message type information. On the contrary, Brehm discloses displaying trunk usage by call (See Figure 5, item 310, of Brehm) and interconnection quality, measured in the form of call statistics, such as message counts (See Figure 6, item 310, and Figure 7, item 310, of Brehm) based on CDR/UDR data.

A significant distinction between Brehm and applicant's subject matter is that Brehm focuses on per-call analysis while applicant's subject matter contemplates what is now claimed as per-link analysis. That Brehm is principally geared toward per-call analysis can be seen in Figures 1 and 2 of Brehm and the description of those figures: “A desire exists for a system and method that allows a service provider to verify the accuracy of interconnection charges” being levied by one carrier onto another carrier. (Brehm, paragraph [0011]). That is, Brehm collects data for the purpose of an “end to

"end" analysis; specifically, for the purposes of determining *usage and quality through another network* and for verifying billing from another network provider. (See Abstract and paragraph [0008] of Brehm). In sharp contrast, applicant's subject matter allows an operator to determine signaling link occupancy and select graphical portions of link occupancy data on a per-link basis for a specific time period, as indicated by the amended language in independent claims 1, 12, and 22.

Specifically, Brehm stores CDR/UDR data and statistics derived from CDR/UDR data. Importantly, CDR data *does not indicate link occupancy*, for two reasons:

First, not every signaling message will generate a CDR. For example, if CDR data is used for billing purposes, a provider typically bills based on completed calls, not on attempted calls; thus, ISUP traffic that results in a failed call attempt is not typically recorded in a CDR. On the other hand, if CDR data is used for quality purposes, signaling message *counts* or other statistical information is saved rather than the signaling message data. (Brehm, paragraph [0072], and Table 5). Second, in order to determine link occupancy, it must be possible to identify which signaling messages come from which link. Brehm does not disclose storing link identification information as part of the CDR/UDR data. In other words, Brehm does not disclose storing enough information from which link occupancy can be determined.

Accordingly, it is respectfully submitted that the rejection of claims 1, 12, and 22 under 35 U.S.C. § 102(b) should be withdrawn and the claims allowed at this time.

Claims 2, 4, 6-11, 14, 15, 17-21, 23, and 25-29 depend upon one of claims 1, 12, and 22. Accordingly, for the reasons provided for claims 1, 12, and 22, applicant

respectfully submits that the rejection of claims 2, 4, 6-11, 14, 15, 17-21, 23, and 25-29 under 35 U.S.C. § 102(b) should be withdrawn and the claims allowed at this time.

Claim Rejection Under 35 U.S.C. § 103

Claims 3 and 13 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Brehm in view of U.S. Patent No. 6,327,350 to Spangler et al. (hereinafter, "Spangler"). This rejection is respectfully traversed.

Claims 3 and 13 depend from claims 1 and 12, respectively. As set forth above, Brehm fails to teach or suggest displaying a graph of signaling link occupancy per unit time and allowing a user to select link utilization data for one of the signaling links for a specific time period and view corresponding signaling message type information as claimed in claims 1 and 12. Spangler likewise lacks such teaching or suggestion. Spangler is directed to methods and systems for collecting and processing SS7 MSUs. Spangler is directed to generating call detail records (CDRs) based on the MSUs. As stated above, CDR does not indicate signaling link occupancy data. Rather, a CDR is a collection of signaling message parameters, for example as illustrated in column 14 of Spangler. Accordingly, because Brehm and Spangler, alone or in combination, fail to teach or suggest displaying a graph of signaling link occupancy per unit time and allowing a user to select and view signaling message type data corresponding to the link occupancy data, it is respectfully submitted that the rejection of claims 3 and 13 under 35 U.S.C. § 103(a) should be withdrawn and the claims allowed at this time.

CONCLUSION

In light of the above Amendments and Remarks, it is respectfully submitted that the present application is now in proper condition for allowance, and an early notice to such effect is earnestly solicited.

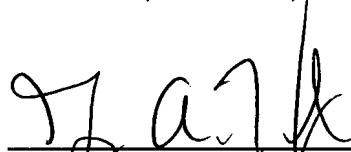
If any small matter should remain outstanding after the Patent Examiner has had an opportunity to review the above Remarks, the Patent Examiner is respectfully requested to telephone the undersigned patent attorney in order to resolve these matters and avoid the issuance of another Official Action.

DEPOSIT ACCOUNT

Although no fee is believed to be due, the Commissioner is hereby authorized to charge any fees associated with the filing of this correspondence to Deposit Account No. 50-0426.

Respectfully submitted,

JENKINS, WILSON, TAYLOR & HUNT, P.A.



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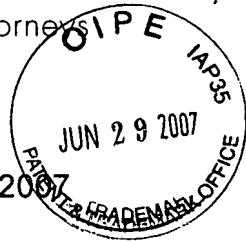
Date: June 29, 2007

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GAH/BJO 1322/158

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Re: U.S. Patent Application Serial No. 10/702,365 for
METHODS AND SYSTEMS FOR AUTOMATED ANALYSIS OF
SIGNALING LINK UTILIZATION
Our File No. 1322/158

Sir:

Please find enclosed the following:

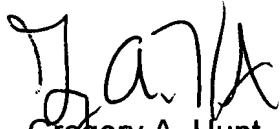
1. A Request for Continued Examination (Form PTO/SB30);
2. An Amendment Transmittal (2 pages);
3. An Amendment under 37 C.F.R. § 1.116 (14 pages);
4. A check in the amount of \$1,240.00;
5. A return-receipt postcard to be returned to our offices with the U.S. Patent and Trademark Office date stamp thereon; and
6. A Certificate of Express Mail No.: EV944036860US.

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A check in the amount of \$1,240.00 is enclosed for the Request for Continued Examination fee and Extension of Time fee. However, the Commissioner is authorized to charge any deficiencies of payment or credit any overpayments associated with the filing of this correspondence to Deposit Account No. 50-0426.

Respectfully submitted,

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Enclosures